*भारतीय मानक*
***Indian Standard***

**IS 7839 : 2022**

# सूखा आइस क्रीम मिश्र — विशिष्टि

*( पहला पुनरीक्षण )*

# Dried Ice Cream Mix — Specification

*( First Revision )*

ICS 67.100.40

© BIS 2022

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फ़र मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

**December 2022**

**Price Group 5**

Dairy Products and Equipment Sectional Committee, FAD 19

## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Dairy Products and Equipment Sectional Committee had been approved by the Food and Agriculture Division Council.

Dried ice cream mix is being increasingly used and marketed in the country. In order to help in proper quality control and production of this product in the country, this standard was originally published in 1975. The second revision has been brought out to harmonize the microbiological requirements of the product with the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011. Methods of test referred in the standard for testing various requirements have also been updated.

In the formulation of this standard, due consideration has been given to the provisions of the *Food Safety and Standards Act*, 2006 and the Rules and Regulations framed thereunder and the Legal Metrology (Packaged Commodities) Rules, 2011. However, this standard is subject to the restrictions imposed under these, wherever applicable.

The composition of the Committee responsible for formulation of the standard is given in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*first revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# *Indian Standard*
# DRIED ICE CREAM MIX — SPECIFICATION
## *( First Revision )*

## 1 SCOPE

This standard prescribes the requirements and methods of sampling and test for dried ice cream mix.

## 2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

## 3 REQUIREMENTS

**3.1 General** — Ice cream mix shall contain the entire amount of refined sugar as required in the reconstituted ice cream. It shall also contain milk solids, sucrose or corn syrup or both; and permitted flavours, stabilizers, emulsifiers and antioxidants. It may also contain the permitted colours. Milk solids shall comprise milk (as defined under IS 13688) and milk products.

**3.1.1** Dried ice cream mix shall be the material prepared by spray or roller drying of ice cream mix as mentioned in **3.1** and shall not contain any added preservative. Refined sugar used in the manufacture of dried ice cream mix shall conform to IS 1151.

**3.2** The dried ice cream mix shall be free from lumps except those that break up readily under slight pressure and shall be reasonably free from scorched particles. It shall also be free from dirt and other extraneous matter. The flavour and the odour of dried ice cream mix or the reconstituted mix shall be sweet and clean.

**3.3** The product shall be processed, packed, stored and distributed under strict hygienic conditions (*see* IS 2491).

**3.4** Stabilizers and emulsifiers as permitted under the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 not exceeding 1.25 percent by mass of the dried ice cream mix, may be used.

**3.5** The dried ice cream mix shall also conform to the requirements given in Table 1 and Table 2.

**Table 1 Requirements for Dried Ice Cream Mix**
(*Clause* 3.5)

| **Sl No.** (1) | **Characteristic** (2) | **Requirement** (3) | **Method of Test, Ref to** (4) |
|---|---|---|---|
| i) | Moisture, percent by mass, *Max* | 4 | IS 11623 for reference purpose and IS 16072 for routine purpose |
| ii) | Milk fat, percent by mass, *Min* | 27 | IS 11721 for reference purpose and **5** of IS 1224 (Part 2) for routine purpose |
| iii) | Sucrose, percent by mass, *Max* | 40 | Annex C of IS 2802* or IS 11764 |
| iv) | Titratable acidity (as lactic acid), percent by mass, *Max* | 1.25 | IS 11765 |
| v) | Solubility index, *Max* | 2.0 ml | IS 12759 |
| vi) | Milk proteins, percent by mass, *Min* | 9.5 | IS 11917 |

Note — In case of dispute, the method indicated by ‘*’ shall be the referee method.

**Table 2 Microbiological Requirements for Dried Ice Cream Mix**

(*Clause* 3.5)

| **Sl No.** | **Characteristic** | **Requirement** | | | | **Method of test, Ref to** |
|---|---|---|---|---|---|---|
| | | **Sampling Plan** | | **Limit (cfu)** | | |
| | | **n** | **c** | **m** | **M** | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| (i) | Aerobic plate count | 5 | 2 | 3 x $10^4$/g | 5 x $10^4$/g | IS 5402 (Part 1) |
| (ii) | Coliform count | 5 | 2 | < 10/g | 10/g | IS 5401 (Part 1) |
| (iii) | *Staphylococcus aureus* (Coagulase positive) | 5 | 0 | 10/g | 1 × $10^2$/g | IS 5887 (Part 8/Sec 1* or Sec 2) |
| (iv) | Yeast and mould count | 5 | 0 | 50/g | — | IS 16069 Part 2 |
| (v) | *Salmonella sp.* | 5 | 0 | Absent/25 g | — | IS 5887 (Part 3/Sec 1) |
| (vi) | *Listeria monocytogenes* | 5 | 0 | Absent/g | — | IS 14988 (Part 1) |
| (vii) | *Bacillus cereus* | 5 | 3 | 5 x $10^2$/g | 1 x $10^3$/g | IS 5887 (Part 6) |
| (viii) | *Sulphite reducing clostridia* | 5 | 3 | 50/g | 1 x $10^2$/g | ISO 15213 |
| (ix) | *E. coli* | 5 | 0 | Absent/g | — | IS 5887 (Part 1) |

NOTES

**1** For sampling plan, *see* Annex B.

**2** In case of dispute, the method indicated by '*' shall be the referee method.

**3** The requirement for *Salmonella* shall be tested in a laboratory situated away from the production area.

## 4 PACKING AND MARKING

### 4.1 Packing

The material shall be packed in hermetically sealed, clean sound containers, unless otherwise agreed between the purchaser and the supplier, in such a way as to protect it from deterioration. It shall be packed in nitrogen or a mixture of nitrogen and carbon dioxide, if desired by the purchaser.

### 4.2 Marking

**4.2.1** The following information shall be marked legibly and indelibly on each container:

a) Name of the product;
b) List of the ingredients in the descending order;
c) Name and address of the manufacturer;
d) Batch or code number;
e) Month and year of manufacturing or packing;
f) Net quantity;
g) Direction for storage;
h) Expiry/use by (date, month & year); and
j) Any other requirements under the Food Safety and Standards (Labelling and Display) Regulations, 2020 and the *Legal Metrology Act*, 2009 and Rules framed thereunder.

**4.2.2** *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

## 5 SAMPLING

The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in Annex C of IS 1165.

## ANNEX A

(*Clause* 2)

## LIST OF REFERRED STANDARDS

| *IS No.* | *Title* |
|---|---|
| 1151 : 2021 | Refined sugar — Specification (*third revision*) |
| 1165 : 2022 | Whole milk powder — Specification (*sixth revision*) |
| 1224 (Part 2) : 1977 | Determination of fat by the gerber method: Part 2 milk products (First Revision) |
| 2491 : 2013 | Food hygiene — General principles — Code of practice (*third revision*) |
| 2802 : 2022 | Ice cream and *Kulfi* — Specification (*first revision*) |
| 5401 (Part 1) : 2012/ISO 4832 : 2006 | Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms: Part 1 Colony count technique (*second revision*) |
| 5402 (Part 1) : 2021/ISO 4833-1 : 2013 | Microbiology of the food chain — Horizontal method for the enumeration of microorganisms: Part 1 Colony count at 30ºC by the pour plate technique (*third revision*) |
| 5887 | Methods for detection of bacteria responsible for food poisoning |
| (Part 1) : 1976 | Isolation, identification and enumeration of *Escherichia coli* (*first revision*) |
| (Part 3/Sec 1) : 2020/ISO 6579-1 : 2017 | Horizontal method for the detection, enumeration and serotyping of *Salmonella*, Section 1 Detection of *Salmonella* spp. (*third revision*) |
| (Part 6) : 2012/ISO 7932 : 2004 | Horizontal method for the enumeration of presumptive *Bacillus cereus*: Part 6 Colony — Count technique at 30ºC (*first revision*) |
| (Part 8/Sec 1) : 2002/ ISO 6888-1 : 1999 | Horizontal method for enumeration of coagulase-positive Staphylococci (*Staphylococcus aureus* and other Species), Section 1 Technique using Baird-Parker agar medium |
| (Part 8/Sec 2) : 2002/ ISO 6888-2 : 1999 | Horizontal method for enumeration of coagulase — positive (*Staphylococcus aureus* and other Species), Section 2 Technique using rabbit plasma fibrinogen agar medium |
| 11623 : 2008/ISO 5537 : 2004 | Dried milk — Determination of moisture content (Reference method) (*first revision*) |
| 11721 : 2013/ISO 1736 : 2008 | Dried milk and dried milk products — Determination of fat content — Gravimetric method (Reference method) (*second revision*) |
| 11764 : 2005/ISO 2911 : 2004 | Sweetened condensed milk — Determination of sucrose content — Polarimetric method (*first revision*) |
| 11765 : 2017/ISO 6091 : 2010 | Dried milk — Determination of titratable acidity (Reference method) (*first revision*) |
| 11917 : 2018/ISO 8968-1 : 2014 | Milk and milk products — Determination of nitrogen content — Kjeldahl principle and crude protein calculation (*first revision*) |
| 11963 : 2005/ISO 5548 : 2004 | Caseins and caseinates — Determination of lactose content — Photometric method (*first revision*) |
| 12759 : 2019/ISO 8156 : 2005 | Dried milk and dried milk products — Determination of insolubility index (*first revision*) |
| 12760 : 2012/ISO 8070 : 2007 | Milk and milk products — Determination of calcium, sodium, potassium and magnesium contents — Atomic absorption spectrometric method (*first revision*) |
| 13688 : 2020 | Packaged pasteurized milk — Specification (*second revision*) |
| 14988 (Part 1) : 2020/ISO 11290-1 : 2017 | Microbiology of the food chain — Horizontal method for detection and enumeration of *Listeria monocytogenes* and of *Listeria* spp.: Part 1 Detection method (*first revision*) |
| 16069 (Part 2) : 2013/ISO 21527-2 : 2008 | Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds: Part 2 Colony count technique in products with |

| *IS No.* | *Title* |
|---|---|
| | water activity less than or equal to 0.95 |
| 16072 : 2012 | Determination of moisture content in milk powder and similar products — Routine Method |
| ISO 15213 : 2003 | Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of sulfite-reducing bacteria growing under anaerobic conditions |

## ANNEX B

(*Table* 2)

## SAMPLING PLAN FOR MICROBIOLOGICAL REQUIREMENTS

### B-1 SAMPLING PLAN FOR MICROBIOLOGICAL REQUIREMENTS

The terms *n*, *c*, *m* and *M* used in this standard have the following meaning:

*n* = Number of units comprising a sample.

*c* = Maximum allowable number of units having microbiological counts above *m* for 2-class sampling plan and between *m* and *M* for 3-class sampling plan.

*m* = Microbiological limit that separates unsatisfactory from satisfactory in a 2-class sampling plan or acceptable from satisfactory in a 3-class sampling plan.

*M* = Microbiological limit that separates unsatisfactory from satisfactory in a 3-class sampling plan.

### B-2 INTERPRETATION OF RESULTS

| *2-Class Sampling Plan (where n, c and m are specified)* | *3-Class Sampling Plan (where n, c, m and M are specified)* |
|---|---|
| 1. Satisfactory, if all the values observed are $\leq m$<br>2. Unsatisfactory, if one or more of the values observed are > *m* or more than *c* values are > *m* | 1. Satisfactory, if all the values observed are $\leq m$<br>2. Acceptable, if a maximum of *c* values are between *m* and *M* and the rest of the values are observed as $\leq m$<br>3. Unsatisfactory, if one or more of the values observed are > *M* or more than *c* values are > *m* |

## ANNEX C

(*Foreword*)

## COMMITTEE COMPOSITION

Dairy Products and Equipment Sectional Committee, FAD 19

| *Organization* | *Representative(s)* |
|---|---|
| National Dairy Research Institute, Karnal | Dr Manmohan Singh Chauhan (***Chairperson***) |
| All India Food Processors Association, New Delhi | Dr K. L. Gaba<br>Shri Vijay Gaur (*Alternate*) |
| Bihar State Cooperative Milk Producers Federation Ltd, (COMPFED), Patna | Shri Sushil Kumar<br>Shri Rupesh Raj (*Alternate*) |
| Centre for Analysis and Learning in Livestock and Food (CALF), Anand | Dr Rajesh Nair<br>Dr Rajeev Chawla (*Alternate*) |
| Confederation of Indian Food Trade and Industry, New Delhi | Ms Varsha Yadav<br>Dr Anirudha Chhonkar (*Alternate*) |
| Confederation of Indian Industry, New Delhi | Ms Neha Aggarwal<br>Ms Arti Gupta (*Alternate*) |
| Directorate of Marketing and Inspection, Faridabad | Dr D. M. Govind Reddy<br>Shri Rahul Singh (*Alternate*) |
| Envirocare Labs Pvt Ltd, Thane | Dr Nilesh Amritkar<br>Dr Priti Amritkar (*Alternate*) |
| Export Inspection Council of India, New Delhi | Dr J. S. Reddy<br>Shri Kumar Narender (*Alternate*) |
| Food Safety and Standards Authority of India, New Delhi | Dr Monica Puniya |
| Gujarat Cooperative Milk Marketing Federation Ltd, Anand | Shri Sameer Saxena<br>Shri Sayan Banerjee (*Alternate*) |
| IDMC Ltd, Anand | Shri Devender Gupta<br>Shri Prakash Maheshwari (*Alternate*) |
| Indian Dairy Association, New Delhi | Dr G. S. Rajorhia<br>Dr Satish Kulkarni (*Alternate*) |
| Indian Stainless Steel Development Association, Gurgaon | Shri Rohit Kumar<br>Shri Rajat Aggarwal (*Alternate*) |
| Jupitor Glass Works, New Delhi | Shri Karan Nangia<br>Shri Amreek Singh Puri (*Alternate*) |
| Ministry of Fisheries, Animal Husbandry and Dairying, Department of Animal Husbandry and Dairying, New Delhi | Shri Goutam Kumar Deb<br>Shri Ajit Kumar K. (*Alternate*) |
| Mother Dairy Fruit and Vegetable Ltd, Delhi | Dr Nita Sen<br>Shri Shailender Kumar (*Alternate*) |

| *Organization(s)* | *Representative(s)* |
|---|---|
| National Dairy Development Board, Anand | Shri S. D. Jaisinghani<br>Shri Suresh Pahadia (*Alternate*) |
| National Dairy Research Institute, Karnal | Dr Vivek Sharma<br>Dr Rajesh Kumar Bajaj (*Alternate*) |
| National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Sonipat | Dr P. K. Nema |
| National Institute of Nutrition, Hyderabad | Dr B. Santosh Kumar<br>Dr Sylvia Fernandez Rao (*Alternate*) |
| Punjab State Coop. Milk Producers Federation Limited, Chandigarh | Dr Sanjeev Kumar Sharma |
| Rajasthan Co-op Dairy Federation (RCDF) Ltd, Jaipur | Shri J. D. Singh |
| Tamil Nadu Co-op Milk Producers Federation Ltd, Chennai | Shri S. R. Sankar<br>Shri S. Jeyachandran (*Alternate*) |
| Tetra Pak India Pvt. Ltd, Pune | Shri Shashikant Ramnath Suruse<br>Shri Sameer Singh Suhail (*Alternate*) |
| Vimta Labs Ltd, Hyderabad | Dr Jagadeesh Kodali<br>Dr Muni Nagendra Prasad Poola (*Alternate*) |
| BIS Directorate General | Shrimati Suneeti Toteja, Scientist ‘E’/Director, and Head (Food and Agriculture Department) [Representing Director General (*Ex-Officio*)] |

*Member Secretary*
Dr Bhawana
Scientist ‘D’/Joint Director,
(Food and Agriculture Department), BIS

Panel for Revision of Indian Standards on Dairy Products, FAD 19/Panel IV

| *Organization* | *Representative(s)* |
|---|---|
| National Dairy Research Institute, Karnal | Dr Latha Sabikhi (***Convenor***) |
| All India Food Processor's Association, New Delhi | Shri Vijay Gaur |
| Confederation of Indian Food Trade and Industry, New Delhi | Dr Anirudha Chhonkar |
| Food Safety and Standards Authority of India, New Delhi | Shri Sunil Bakshi |
| Gujarat Cooperative Milk Marketing Federation Limited, Anand | Shri Sameer Saxena |
| Mother Dairy Fruit and Vegetable Private Limited, New Delhi | Dr Nita Sen |
| National Dairy Development Board, Anand | Shri S. D. Jaisinghani |

| | |
|---|---|
| National Dairy Research Institute, Karnal | DR VIVEK SHARMA<br>DR RAJESH KUMAR BAJAJ<br>DR KAUSHIK KHAMRUI<br>DR H.V. RAGHU<br>DR RICHA SINGH |
| Punjab State Cooperative Milk Producers Federation Limited, Chandigarh | SHRI SANJEEV KUMAR SHARMA |

This Page has been Intentionally left blank

This Page has been Intentionally left blank

**Bureau of Indian Standards**

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

**Copyright**

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Head (Publication & Sales), BIS.

**Review of Indian Standards**

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website-www.bis.gov.in or www.standardsbis.in.

This Indian Standard has been developed from Doc No.: FAD 19 (18794).

## Amendments Issued Since Publication

| Amend No. | Date of Issue | Text Affected |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**BUREAU OF INDIAN STANDARDS**

**Headquarters:**

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
*Telephones*: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

**Regional Offices:** *Telephones*

Central : 601/A, Konnectus Tower -1, 6th Floor, 2323 7617
DMRC Building, Bhavbhuti Marg, New
Delhi 110002

Eastern : 8th Floor, Plot No 7/7 & 7/8, CP Block, Sector V, 2367 0012
Salt Lake, Kolkata, West Bengal 700091 2320 9474

Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, 265 9930
Chandigarh 160019

Southern : C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113 2254 1442
2254 1216

Western : Plot No. E-9, Road No.-8, MIDC, Andheri 2821 8093
(East), Mumbai 400093

**Branches** : AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. CHANDIGARH. CHENNAI. COIMBATORE. DEHRADUN. DELHI. FARIDABAD. GHAZIABAD. GUWAHATI. HIMACHAL PRADESH. HUBLI. HYDERABAD. JAIPUR. JAMMU & KASHMIR. JAMSHEDPUR. KOCHI. KOLKATA. LUCKNOW. MADURAI. MUMBAI. NAGPUR. NOIDA. PANIPAT. PATNA. PUNE. RAIPUR. RAJKOT. SURAT. VISAKHAPATNAM.

Published by BIS, New Delhi